LEAD CNC EDMs

Make Mould and Die Machining a Fast and Easy Operation

DESIGNED TO KEEP MOLD MAKERS AHEAD

Lead CNC EDM offers the ability to produce exceptional surface finishes with the ultimate in CNC cycle capability and machining efficiency to reduce cycle time.

Lead CNC EDM combines advanced CNC control logic with extra rigid construction to insure positioning accuracy and repeatability from cycle to cycle. A high performance power supply generates consistent current to optimize surface finish. And with the widest range of models in the industry, making a choice for your application is a breeze.
RAM Type
Machine Structure

- Precision linear ways on all axis assures smooth movement and high accuracy.
- All structural castings are made of FC-30 cast iron, tempered and stress relieved for deformation-free performance.
- High precision spindle assembly insures excellent boring performance.
- Table surface is hardened and precision ground, assuring high machining accuracy and long service life.
- Three axes movements are transmitted by precision ball screws.
- Three axes are driven by AC servo motors.
- Three axes are equipped with 1μm linear scale for closed loop control.
- Each machine is compensated by laser interferometer, ensuring position reliability and increasing machine efficiency.
**RAM Type**

Double Quill Machine

- Two work heads design, the independent controllers can execute different programs so improve the efficiency up to two times.
- The work tank door elevates and descends by auto hydraulic equipment.
- X,Y axis uses high precision roller slide way, uses C5 grade high precision ball screw, with 1μ linear scale full close loop feedback control.
- Each machine is compensated by laser interferometer, ensuring position reliability and increasing machine efficiency.
- Table surface is hardened and precision ground, ensuring high machining accuracy and long service life.
- Z axis is counterbalance design.

**C Type**

Machine Structure

- Compact construction with small footprint.
- The structural parts are manufactured from high quality cast iron (FC-30), tempered and stress relieved for deformation-free performance.
- Base structure casting uses FC35 for high rigidity and reliability.
- All-in-one structure design, lessening space requirement.
- X, Y axis uses high precision roller slide way, uses C5 grade high precision ball screw, with 1μ linear scale full close loop feedback control.
- Each machine is compensated by laser interferometer, ensuring position reliability and increasing machine efficiency.
- Table surface is hardened and precision ground, ensuring high machining accuracy and long service life.
- "GRUNDFOS" horizontal pump.

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### Economic Type

<table>
<thead>
<tr>
<th>Model</th>
<th>CNC-2390D</th>
<th>CNC-3090D</th>
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<tbody>
<tr>
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<td>2400 / 2400</td>
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<td>Work head travel (Z axis)</td>
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<table>
<thead>
<tr>
<th>Model</th>
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<tr>
<td>Quill travel (Z1 axis)</td>
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</tr>
<tr>
<td>Work head travel (Z axis)</td>
<td>210</td>
</tr>
</tbody>
</table>
**Standard Functions**
- Built-in parameter table for standard materials.
- 50 sets of workpiece coordinates.
- Automatic depth table creating function.
- Automatic setting for square circular pattern.
- Machine trouble record function.

**Optional Functions**
- Path retrace orbital function.
- 3D coordinate rotating function.
- 3D orbital function.
- Automatic offset compensation function for C-axis.
- MPG function.
- C-axis simultaneous eroding.
- LORAN discharge function.
- Cone type discharge function.

**3D path working capacity**
- Machine/human dialogue
- Auto parameter table

**Convenient Machining Programs Input Interface**
- Conversational setting for machining hole positions list.
- Conversational automatic creating of depths list.
- Machining mode simulation graphic.

**Touch Point Function**
- The display provides convenient touch point function by automatic and manual modes, and 50 sets of touch point memory. The edge-search values are automatically memorized into machining programs.
- In addition to single point touch function, the control also allows for automatic internal center touch.
- Automatic external center touch.

**Orbital Eroding Function** *(Standard orbital eroding function display)*
- The orbital eroding function provides paths from simple arcs and to complex 3D movements and path return to generate intricate shapes.

**Orbital Eroding Function** *(Advanced orbital eroding function display)*
- In addition to the standard angular positioning function, the C-axis also provides real time compensation function for rotating part. In case of mold offset on C-axis, the X and Y axis will move simultaneously according to rotating angle. This will ensure centering for part on C-axis.

**Coordinate rotation Function**
- The coordinate rotation function permits machining axes to be rotated as desired. With this function, the machine can perform point touch after 3D rotation, single/multiple points machining or orbital eroding.

**C-axis Function**
- When applying the optional C-axis function, the C-axis and Z-axis can perform machining simultaneously. This function is suitable for helical eroding operation such as helical gear, etc.
Excellent Rigidity and Durable Construction for Unsurpassed Stability and Precision

- Precision Linear Ways on 3 Axes
  - X, Y-axis employ roller type linear ways, exhibiting outstanding structural rigidity and machining stability.
  - Z-axis is equipped with ball type linear ways for minimum friction and vibration.

- Precision Ball Screw
  - Three axes are transmitted by C5 grade precision ball screws.

- Finite Element Analysis (FEA)
  - The structural parts of Lead CNC EDM are designed and analyzed by applying the advanced Finite Element Analysis (FEA). This enables Lead machines to achieve the best machine rigidity, stability and dynamic performance of operation.

- 1μ Linear Scale on 3 Axes
  - Three axes are equipped with 1μ differential type precision linear scales, providing closed loop control. The linear scale features excellent anti-interfering signal performance while ensuring high positioning accuracy.
Advanced PC Based Control combined with Superior Power Supply Unit Dramatically Boost Eroding Efficiency!

- PC BASED controller
- PENTIUM 586 micro processor
- 50A - 250A working current

CR6C

Specially Designed for Tungsten Carbide Applications

Features of CNC Control
- The controller employs INTEL PENTIUM industrial grade mother board.
- 15" TFT LCD monitor.
- Conversational man-machine interface.
- Automatic table type editing for 10-step machining programs creation.
- Tungsten steel, extra hard and special material eroding circuit.
- MPG handwheel for micrometric positioning adjustment.

Operational Interface
- Conversational Chinese/English operational interface.
- Graphic automatic touch mode interface.
- Table type program input interface.
- Selection type 2D/3D orbital setting.
- Diagnostic interface for system I/O.
- Graphic display interface for moving path.

Features of Power Supply Unit
- Isolated modular circuit design increases convenience of maintenance and stability of circuit.
- Full digital discharge pulse control combined with the use of FPGA extra large IC components.
- This permits high efficiency discharge pulse control, minimizes ARC and greatly upgrades discharging efficiency.
- Extra hard material discharge circuit is available upon request.
**Excellent for Sophisticated Micro Finish.**

**High Precision and Extra Hard Material Machining.**

*The Lead CNC EDMs are precision engineered machines incorporating all the advanced features that have been requested for mould and die industries. Lead EDMs can help you reach new levels of accuracy, surface finish and productivity.*

**Versatile Applications**

- Precision tungsten steel moulds.
- Electronic parts moulds.
- Mirror-finish injection moulds.
- Injection moulds.
- Die casting moulds.
- Progressive IC punching moulds.

**Dependability Through Rigorous Inspection**

Each LEAD machine is subjected to rigorous inspection during assembling and before shipment to assure peak operational performance year after year.

**Axis travel accuracy is assured through inspections during assembling.**
Excellent Accessories create more convenience operation

**Standard Accessories (Each Machine)**
- Automatic fire extinguisher
- Halogen lamp
- Filters
- Magnetic nozzles
- Drill chuck
- Tool box and kit

**Optional Accessories**
- ATC
- Oil cooler
- C axis
- Magnetic table

Lead EDMs can help you reach new levels of accuracy, surface finish and productivity.
### Specifications of Machine Unit

**Model** | **C Type** | **CNC-3415**
--- | --- | ---
Table travel (X axis) mm | 400 | 400
Table travel (Y axis) mm | 300 | 300
Quill travel (Z axis) mm | 260 | 260
Work head travel (Z axis) mm | 210 | 210
Work table dimensions (LxW) mm | 650x400 | 650x400
Distance between plate and table mm | 195-625 | 195-625
Work tank inner dimensions (WxDxH) mm | 1050x560x424 | 1050x560x424
Max capacity of dielectric fluid Litre | 400 | 400
Max electrode weight kg | 75 | 75
Max workpiece weight kg | 1000 | 1000
Machine unit dimensions (WxDxH) mm | 1210x1300x2150 | 1210x1300x2150
Machine unit weight kg | 950 | 950

### Specifications of Machine Unit

**Model** | **RAM Type**
--- | ---
Table travel (X axis) | **CNC-430** | 400
Table travel (Y axis) | 300
Quill travel (Z axis) | -
Work head travel (Z axis) | 320
Work table dimensions (LxW) | 650x320
Distance between plate and table | 355-675
Work tank inner dimensions (WxDxH) | 990x650x405
Max capacity of dielectric fluid Litre | 450
Max electrode weight kg | 75
Max workpiece weight kg | 1000
Machine unit dimensions (WxDxH) | 1150x1700x2280
Machine unit weight kg | 2300

### Specifications of Machine Unit

**Model** | **RAM Type Double Quill**
--- | ---
Table travel (X axis) | **CNC-2390D** | 1400 / 1450
Table travel (Y axis) | 900 / 950
Quill travel (Z axis) | -
Work head travel (Z axis) | 580 / 580
Work table dimensions (LxW) | 2500x1200
Distance between plate and table | 650-1250
Work tank inner dimensions (WxDxH) | 3500x1900x650
Max capacity of dielectric fluid Litre | 500
Max electrode weight kg | 450
Max workpiece weight kg | 800
Machine unit dimensions (WxDxH) | 5400x4300x3450
Machine unit weight kg | 1500

### Specifications of Machine Unit

**Model** | **CNC-3415**
--- | ---
Table travel (X axis) mm | 400 | 400
Table travel (Y axis) mm | 300 | 300
Quill travel (Z axis) mm | 260 | 260
Work head travel (Z axis) mm | 210 | 210
Work table dimensions (LxW) mm | 650x400 | 650x400
Distance between plate and table mm | 195-625 | 195-625
Work tank inner dimensions (WxDxH) mm | 1050x560x424 | 1050x560x424
Max capacity of dielectric fluid Litre | 400 | 400
Max electrode weight kg | 75 | 75
Max workpiece weight kg | 1000 | 1000
Machine unit dimensions (WxDxH) mm | 1210x1300x2150 | 1210x1300x2150
Machine unit weight kg | 950 | 950

### Specifications of Machine Unit

**Model** | **CNC-430** | **CNC-640** | **CNC-850** | **CNC-1160** | **CNC-1270** | **CNC-1570** | **CNC-1880** | **CNC-2390** | **CNC-3090**
--- | --- | --- | --- | --- | --- | --- | --- | --- | ---
Table travel (X axis) mm | 400 | 600 | 800 | 1100 | 1200 | 1500 | 1800 | 2300 | 3000
Table travel (Y axis) mm | 300 | 400 | 500 | 600 | 700 | 700 | 800 | 900 | 900
Quill travel (Z axis) mm | - | - | - | - | - | - | - | - | -
Work head travel (Z axis) mm | 320 | 350 | 400 | 450 | 500 | 500 | 580 | 580 | 580
Work table dimensions (LxW) mm | 650x320 | 900x500 | 1000x600 | 1250x1000 | 1400x900 | 1600x900 | 2000x1100 | 2500x1200 | 3200x1200
Distance between plate and table mm | 355-675 | 410-760 | 450-650 | 500-1000 | 590-1014 | 596-1084 | 660-1200 | 650-1250 | 700-1300
Work tank inner dimensions (WxDxH) mm | 990x650x405 | 1250x815x542 | 1000x983x686 | 2000x1300x700 | 2150x1150x700 | 2500x1150x700 | 3000x1500x650 | 3500x1820x650 | 4500x1500x650
Max capacity of dielectric fluid Litre | 450 | 650 | 1150 | 1810 | 2300 | 2300 | 3585 | 5000 | 5520
Max electrode weight kg | 75 | 110 | 120 | 350 | 400 | 400 | 650 | 800 | 1500
Max workpiece weight kg | 1000 | 1500 | 2000 | 3500 | 4000 | 4000 | 6500 | 8000 | 15000
Machine unit dimensions (WxDxH) mm | 1150x1700x2280 | 1520x2325x2465 | 1850x2800x2750 | 3400x3500x3200 | 2500x2500x2040 | 2500x2500x2040 | 4960x3880x3450 | 5400x4300x3450 | 5700x4450x3600
Machine unit weight kg | 2300 | 4150 | 5400 | 5500 | 6190 | 6190 | 12000 | 15000 | 23000
ZNC EDM MODEL: CR5/CR5C
Features of Machine structure

CJ125/CJ235
- CAD design and high precision structure.
- FC-30 casting made from Furui No-Bake Molding system.
- Base, Saddle, Column and Spindle are made by synchronous boring to keep the highest precision.
- "GRUNDFOS" horizontal pump made in Denmark.
- Movement surface with TRUCITE.
- X and Y axes are constructed with V-Shape and Flat sideways
- High precision and strength Quill assures excellent eroding
- Hardness heat treatment and high precision grinding worktable assures structure precision and life.

Standard accessories:
- Halogen lamp
- Filters
- Magnetic nozzles set
- Drill Chuck
- Tool box and kit

CJ340/CJ345/CJ560
- CAD design and high precision structure
- Base and saddle, column and spindle are with synchronous boring
- Quill: High precision sideways and ball screw to ensure machine performance.
# ZNC Controller Box Features

- Pentium PC–base CNC controller(CR5C).
- 15 inch color monitor(CR5C).
- Dialogue Operation Box(CR5C).
- Z axis automatic touch touch and reset zero function(CR5C).
- Digital control panel with 3 axes digital display(CR5).
- Ten groups of eroding parameters in the memory mode.
- Ten–step depth eroding parameters from rough to fine finish.
- Automatic save eroding parameters after electricity power off.
- ARC prevention system.
- Alarms system can indicate what the alarm happens and stop the machine to prevent from the damages.
- Special electrical circuit design for mirror finish, and cutting tungsten carbide.

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# DRILL EDM

- Depth controller (Z axis)
- Overcut (gap) on each side is 0.05~0.2 mm.
- The use of pure water as working fluids for cost saving and extra safety.
- Precision (hole straightness) is approx 0.04 mm ± 0.02 mm.
- For drilling 0.3 mm holes, copper is better than brass pipe.
- Able to drill extremely hard material such as alloys etc.
- Digital readout 3 axis (X,Y,Z)
- Drilling depth reach to 300mm by electrode Ø1.0 mm
- Able to drill extremely hard material such steel(SKD11,SKD61), Tungsten Carbide, alloys etc...
- Three axes are driven by DC motors.

## Standard accessories:
- Digital readout 3 axis (x, y, z)
- Electrode guide Ø1.0 mm
- Electrode holder Ø0.3~3.0 mm
- Tool box & kits
- Cotton filter

## Optional accessories:
- Electrical guide Ø0.3~3.0 mm
- Electrical pipe brass 400mm
- Electrical pipe copper 300mm

## Extra hard Material Machining:
- Metal: Tungsten Carbide 15mm
- Metal: SKD 11 40mm
- Metal: SKD 11 150mm
- Deep hole drilling

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### SPECIFICATIONS OF POWER SUPPLY UNIT

<table>
<thead>
<tr>
<th>Model</th>
<th>CR5</th>
<th>CR5C / CR6C</th>
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<td>Input voltage</td>
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<td>Input power</td>
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<tr>
<td>Working voltage(no load)</td>
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<tr>
<td>High voltage</td>
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<td>Min. OFF TIME</td>
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* One extra power unit. Continuing improvement will allow the maker to modify the design or specification without notice.

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### Model Specifications

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<th>Model</th>
<th>CJ102</th>
<th>CJ345D</th>
<th>CJ560D</th>
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<td>Table travel(X axis)</td>
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